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Edited by the International Conference on Infrastructure Development in Africa
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South Africa

NETWORKING OF DOMESTIC CONSTRUCTION ENTERPRISES FOR INFRASTRUCTURAL DELIVERY: A STRATEGY FOR CONSTRUCTION INDUSTRY DEVELOPMENT

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This paper argues that although infrastructure delivery results in numerous economic benefits, it can be a curse depending on who delivers it. This paper seeks to examine the impact of the influx of non-domestic construction companies and the possible effect of their activities on domestic construction enterprises, and the overall effect on the construction industry's development agenda of Ghana. By design the paper is descriptive. The paper uses literature review as a method to identify, summarize and synthesize literature on infrastructure delivery and its impact on economic growth of nations, particularly Africa. The paper finds that major infrastructure projects are executed mostly by non-domestic construction firms largely due their greater experiences and resources which give them competitive advantage over their domestic counterparts. This situation is detrimental to the growth, survival and profitability of local construction consultants, contractors and individual practitioners and the construction industry development agenda of Ghana. The need exist for capacity building and / or improvement of domestic construction enterprises through networking to meet the challenges of globalization which are inevitable. The paper open new directions of infrastructural delivery research that focuses on the impact of the activities of non-domestic construction enterprises on the Ghanaian construction industry generally, the Ghanaian construction industry development agenda and the nations' construction related social and economic development.

Keywords: construction industry, Ghana, infrastructure delivery, networking.

1. INTRODUCTION

The construction industry (CI) is responsible for providing and maintaining physical infrastructural assets which are beneficial to the nation to achieve social and economic goals. As a key sector of the economy of every nation, the CI drives a country's social and economic development. As result, the construction industry development has gained much attention of many nations due to the enormous contributions of the industry toward the social life and the economy of nations particularly in developing nations such as many nations in Africa including Ghana.

Many researchers attest to contributions of the CI to many nations. The construction industry has been considered as the key sector of economy of every nation that drives a country's social-economic development (Hillebrandt, 2000; Lopes, 2012; Ofori, 2012; Winch 2010, Wong *et al.* 2010) The industry is responsible for providing and maintaining physical assets which are beneficial to the nation to achieve social and

economic goals (Gann and Salter 2000, Winch 2010), it also contributes greatly to the GDP growth of a nation and also employs a larger percentage of the working population of a nation (Ofori, 2012). Construction contributes between 5 and 10 percent of gross domestic product (GDP) in all countries, employs up to 10 percent of the working population, and is responsible for about half of the gross fixed capital formation (Lopes, 2012). The estimate by Badiane (2001) suggests that investments in housing alone account for 2 to 8 percent of GNP; between 10 and 30 percent of gross capital formation; between 20 and 50 percent of accumulated wealth; and between 10 and 40 per cent of household expenditure.

In Ghana, the usefulness of the construction industry is made manifest upon examination of economic growth characteristics of the nation. Ghana faces many developmental challenges which are largely due to the nature of its economic growth which is best described as sporadic (Chikweche and Fletcher, 2014). Since the construction industry is said to have the potential to be “an economic regulator” or “the balance wheel of the economy” (Hillebrandt, 2000), then there exit a direct proportional relationship between economic growth of a nation and the growth of that nation’s construction industry, which is characterized by the physical infrastructures and asset-based development upon which growth and development are achieved (Songwe 2014).

Again, construction activity is relatively labour-intensive (Ofori, 2012). This is especially the case in many developing countries where due to lack of mechanization of many construction production processes, labour is resorted to for almost every aspect of construction processes. In situations like this, the CI generates employment for many citizens thereby improving their social and economic conditions. Moreover, constructed items are location specific, and are built where they are required. This characteristic of construction activities has the potential to generate incomes even in isolated communities. This can result in poverty alleviation (Ofori, 2012) which is common in most parts of villages in Ghana. This also results in the spreading and distributing the wealth of the nation to many parts of the country (Ofori, 2012).

In Ghana for instance, the construction industry alone accounts for more than 60% of the Gross National Capital (GNP) (Laryea 2010). Ofori (2012) concur that owing to its large size, the construction industry has the potential to contribute directly to the growth of the national economy. This is evidenced by the current statistical report of Ghana on Gross Domestic Product (GDP) at Current Market Prices by Economic Activity Table 1. From table 1, of all the industrial activities the construction subsector recorded the highest growth 13,327 (in Million GhC) representing 7.4% in 2014. Further analysis of the entries in Table 1 reveals that the construction subsector’s contribution ranks second to crop which is highest contributor amongst all the subsectors captured under the three main sectors of the economy of Ghana. This reveals the significance of the industry’s contributions to the national economy. This significant contribution may also be as result of enormous needs of the nation as a developing country for infrastructures which are provided mainly by the construction industry.

Table 1: Gross Domestic Product (GDP) at Current Market Prices by Economic Activity

		GHC Million								
Economic Activity		2006	2007	2008	2009	2010	2011	2012	2013*	2014**
1.	AGRICULTURE	5,415	6,320	8,875	11,343	12,910	14,151	16,668	19,969	21,642
1.01	Crops	3,794	4,409	6,435	8,425	9,422	10,650	12,525	15,383	16,506
	<i>c.w. Cocoa</i>	537	581	706	874	1,192	1,996	1,869	1,963	2,623
1.02	Livestock	437	501	606	729	873	1,004	1,362	1,346	1,448
1.03	Forestry and Logging	736	910	1,072	1,314	1,614	1,549	1,880	1,992	2,145
1.04	Fishing	448	500	762	874	1,001	952	1,302	1,249	1,544
2.	INDUSTRY	3,704	4,533	5,855	6,776	8,294	14,274	20,438	25,638	30,834
2.01	Mining and Quarrying	497	652	683	740	1,013	4,690	6,361	9,036	9,891
	<i>c.w. Crude Oil</i>	0	0	0	0	378	3,746	5,649	7,335	6,534
2.02	Manufacturing	1,823	1,990	2,277	2,478	2,941	3,842	4,263	4,849	6,445
2.03	Electricity	143	130	155	167	266	280	312	428	507
2.04	Water and Sewerage	224	227	229	246	368	467	551	559	664
2.05	Construction	1,016	1,564	2,500	3,144	3,706	4,995	8,170	10,705	13,127
3.	SERVICES	8,690	10,922	13,935	17,543	22,184	27,423	35,837	46,806	56,235
3.01	Trade; Repair of Vehicles	1,141	1,335	1,710	2,109	2,701	3,282	4,060	5,222	5,745
3.02	Hotels and Restaurants	894	1,210	1,718	2,196	2,593	3,007	3,517	4,774	5,054
3.03	Transport and Storage	2,357	2,849	3,262	3,758	4,578	5,997	8,041	10,149	11,889
3.04	Information and Communication	483	511	622	657	831	989	1,590	2,217	2,618
3.05	Financial and Insurance activities	473	739	1,089	1,547	2,240	2,466	3,452	5,954	7,468
3.06	Real Estate, Professional, Administrative & Support Service activities	914	1,018	1,185	1,462	1,945	2,591	3,502	3,363	3,761
3.07	Public Administration & Defence; Social Security	862	1,289	1,799	2,479	3,024	3,897	4,952	6,319	8,639
3.08	Education	655	856	1,132	1,506	1,877	2,307	3,201	3,789	4,628
3.09	Health and Social Work	250	306	381	513	674	728	921	1,132	1,363
3.10	Community, Social & Personal Service Activities	662	807	1,039	1,318	1,722	2,159	2,701	3,886	4,871
	FISM (Financial Intermediation Services Indirectly Measured)***	406	503	689	1,192	1,512	1,458	2,117	3,419	4,229
4.	GROSS DOMESTIC PRODUCT at basic prices	17,404	21,252	27,975	34,470	41,876	54,394	70,627	88,994	104,462
	Net Indirect Taxes	1,302	1,902	2,204	2,128	4,166	5,422	4,689	5,946	8,954
5.	GROSS DOMESTIC PRODUCT in purchasers' value	18,705	23,154	30,179	36,598	46,042	59,816	75,315	94,939	113,416

*Revised

** Provisional

*** FISM is a negative item

Source: Ghana Statistical Services, 2015.

Ghana as a developing economy has a great need for physical infrastructures, which are built through construction activities. Such infrastructure includes schools, hospitals, airports and seaports, bridges, roads, houses among others that contribute to the socio-economic development of the country. The enormity of such needs attracts construction firms both within and outside which also makes the country ripe for competition. Also, in this era of globalization, all nations are competing nations to position to attract foreign investment (ofori, 2012). As a result the opportunity offered by ECOWAS and globalization further increases the intensity of the competition. The industry's ability to take maximum advantage of the opportunities for its own growth is the biggest question today because competition remains the big challenge of the industry.

High competition and high risk have been considered as the construction industry's major challenge (Schaufelberger 2009). Mochtar and Arditi (2001) contend that, the construction industry is typically characterized by extreme competitiveness, high uncertainty and risks, and generally low profit margins when compared to other industries. In Ghana, these constraints are exacerbated by globalization, which has manifested in an inflow of investment into Ghana from other countries. Although, it creates work opportunities however, the local construction consultants, contractors and

individual practitioners face greater competition from their foreign counterparts that are likely to have greater experience and resources (Ofori, 2012). Similarly, the opportunities offered by the Economic Community of West African States, has also lead to an influx into Ghana of firms from the other member countries that further escalates the intensity of competition prevailing in the industry.

The rapid changes in project procurement and implementation processes and the pervasive utilization of information and communication technology (ICT), changing client needs in the construction industry, advances in technology, and the particular needs of the country as a developing economy (Matzdorf *et al.*, 1997; Jaafar *et al.*, 2008) has also added to the woes of the construction industry and the stakeholders such as the contractors and consultants. These are the driving forces behind the construction industry's development agenda in many countries.

The rest of the paper examines the issues with the construction industry development agenda for Ghana with particular focus on the key challenges. It further examines networking as the right cooperate strategy that requires attention of all stakeholders. It further peruse how these stakeholders can get involved and finally concludes by drawing the attention of construction management researchers to new areas of infrastructure delivery research that can make a profound impact on Ghana's construction industry development agenda.

2. CONSTRUCTION INDUSTRY DEVELOPMENT CHALLENGES OF GHANA

In the view of Ofori (1993: 48-49) construction industry development “refers to the pursuit of the improvement of the industry as an objective in itself ... the approach is direct and continuous ... [it] would incorporate appropriate strategies, and integrated plans and programmes under specific implementing agencies”. This definition suggests that appropriate strategies coupled with integrated plans and programmes implemented and supervised by specific agencies are critical factors for success. This leads to improvement in the industry itself and the resultant effects are used to achieve social and economic benefits by nations. Although, the various dimensions highlighted in the definition are explored, it appears the aspect that has to do with strategies lack some measure of appropriateness, giving our peculiar characteristics as a nation.

A more concise and yet detailed definition of construction industry development is: “a deliberate and managed process to improve the capacity and effectiveness of the construction industry to meet the national economic demand for building and civil engineering products, and to support sustained national economic and social development objectives” (Task Group 29). The definition highlights ‘to improve the capacity’. This means that construction industry development must first improve the capacity of the industry to meet the demand for building and civil products before the benefit of ‘supporting sustained national economic and social development’ can be realized. Improving the capacity is a factor that requires the use of the right cooperate strategy. When the capacity improvement is done, the benefits are enormous.

Ofori (2012:8) notes that the development of the construction industry wills among others things promote:

1. Increased value for money to industry clients as well as environmental responsibility in the delivery process

2. The viability and competitiveness of domestic construction enterprises
3. Optimisation of the role of all participants and stakeholders through process, technological, institutional enhancement and through appropriate human resource development.

From the foregoing, it is obvious that construction industry development is deemed to have the following components in order to achieve the benefits: human resource development; materials development; technology development; corporate development; development of documentation, procedures and operating environment; institution building; and develop. Developments in these areas are necessary for overcoming the inherent challenges that confronts most countries in the construction industry development agenda. Key challenges in this effort are highlighted in table 2, which compares Singapore and Hong Kong construction industry development initiatives.

Table 2 Comparison of Aspects of Singapore's C21 with Hong Kong's Construction Industry Review Committee (2001)

<i>Mission</i>	<i>Vision</i>	<i>Key Problems</i>	<i>Strategic Thrusts</i>
Singapore	"To Be a World Class Builder in the Knowledge Age" (p. 21).	<ol style="list-style-type: none"> 1. low productivity level and negative productivity growth 2. multi-layered subcontracting system 3. segregation of industry's activities 4. poor worksite safety 5. malpractices and social problems 	<ol style="list-style-type: none"> 1. enhancing the professionalism of the industry 2. raising the skills level 3. improving industry practices and techniques 4. adopting an integrated approach to construction 5. developing an external wing 6. a collective championing effort for the construction industry.
Hong Kong	"An integrated construction industry that is capable of continuous improvement towards excellence in a market-driven environment" (p. 2).	<ol style="list-style-type: none"> 1. poor site safety record 2. unsatisfactory environmental performance 3. need for a more client-focused approach 4. extensive use of traditional and labour-intensive construction methods 5. an inadequately trained workforce 6. tendency to award contracts to lowest bidders 7. short-term attitude to business development 8. non value-adding multi-layered subcontracting 	<ol style="list-style-type: none"> 1. fostering a quality culture 2. achieving value in construction procurement 3. nurturing a professional workforce 4. developing an efficient, innovative and productive industry 5. improving safety and environmental performance 6. devising a new institutional framework to drive the implementation of the change programme for the industry.

		9. declining productivity growth and high building cost 10. Fragmentation and adversarial culture within the industry.	
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Adopted from Ofori (2012)

The highlighted problems in both countries as given in Table 2 are no different from that of Ghana. Ghana construction industry faces more of these problems in addition to many other several constraints. In a report by the Government of the Republic of Ghana (2000) Highway Network Master Plan, 2001-2020, (P. 144 – 145) the following problems were further highlighted as follows:

“national road contractors face the following problems “regardless of their financial class”

- Inability to secure adequate working capital
- Inadequate management
- Insufficient engineering capacity
- Poor workmanship.

The problems of consultants include:

- inadequate operating cash flow
- inadequate flow of jobs
- low level of fees, hinders the development of their technical support system
- low productivity
- poor quality of work
- lack of means and opportunities for providing training.”

These constraints underscore the need for capacity building of domestic construction enterprises. Such capacity building will enhance their viability and competitiveness, which are essential benefits of construction industry development. Ofori (2012:16) further notes that: “the industry’s performance in most respects, for example, in terms of cost, time, quality, safety and health of its workers, the durability of its products and the satisfaction of its stakeholders, is inadequate.” Many of these constraints are partly due to the opportunities that local firms are denied in area of infrastructure delivery. This is particularly so in multi-million dollar projects with external funding.

The effects are enormous. It denies local firms from the opportunities for training of it human resources to enhance the firms’ management capacity, engineering capacity and workmanship. This further leads to the firms’ inability to secure adequate working capital. The firms therefore has to cope with inadequate operating cash flow due to inadequate flow of jobs which further results in lack of means and opportunities for providing training. These constraints are stifling growth of our local construction firms’ which has a ripple effect on the construction industry development agenda for Ghana. These and many other factors are the construction industries’ major challenges which have culminated into the struggle to develop the construction industry of Ghana.

3. INFRASTRUCTURAL DELIVERY, A SOLUTION?

Many infrastructures such as schools, hospitals, airports and ports; roads, bridges and irrigation systems; and water and power infrastructure and many others are delivered by the construction industry. As to whether a nation will derive the ultimate benefit is determined by a number of factors, principal of which is the origin of the firm providing the constructed infrastructural facility. For instance, when a local construction firm executes an infrastructural project, all profits are likely to be retained in the country which supports the country's economy. On the other hand, profits accrued from projects executed by 'non domestic' companies are likely to be repatriated to their some countries. In this case the economy of the country hosting the constructed facility does not benefit much. Ghana is therefore likely loose most of such benefits because most of the infrastructures are mostly built by 'non domestic' construction companies.

In Ghana today, many of the infrastructures are built by 'non domestic' companies that are operating in Ghana. This has become possible for two main reasons: globalization and ECOWAS protocols. Globalization means collapse of boundaries, which has made it possible for firms to inter into countries other than their home countries for work. In Africa, the effect of globalization is great. This is due to the fact that almost all nations in Africa are developing nations and because of that they have great need for infrastructures which are built by the construction industry. This need makes non domestic companies attracted into the country in search of such opportunities.

Similarly, ECOWAS protocols provides similar opportunities for free entry into the country of foreign businesses with minimal or no restriction. The effects of these are best described by Ofori, (2012) as follows:

"Globalisation will be manifested in an inflow of investment into Ghana which will create work opportunities. However, the local construction consultants, contractors and individual practitioners will face greater competition from their foreign counterparts which are likely to have greater experience and resources. Another challenge will be for the local construction industry to exploit the opportunities offered by the Economic Community of West African States, and address its possible negative impact such as an influx into Ghana of firms from the other member countries."

Surviving in the competition has been a matter of uphill struggle with little or no success for the domestic construction companies. This is apparently due to the fact that the non domestic counterparts have competitive advantage of having greater experience and many resources (Ofori, 2012). As a result, almost all big and mega infrastructural projects in Ghana are executed by non domestic companies with the domestic companies occasionally brought on board mostly in some form of subcontracting arrangement.

This situation is detrimental to the construction industry development agenda. As noted by Ofori (2012:8), 'The viability and competitiveness of domestic construction enterprises' must be promoted by the construction industry development agenda as an integral success factor. It is this is the anchor of the whole construction industry development agenda. What is therefore necessary is for 'domestic construction enterprises' overcome the challenges greater experience and resources which remains the greatest competitive advantage of 'non domestic' construction companies. This will promote active involvement of domestic construction companies. This will improve on their experiences and resources to enhance their capacity to compete successfully with the non-domestic counterparts.

4. THE STRATEGY - NETWORKING OF LOCAL CONSTRUCTION FIRMS

The foregoing issues suggest the need for capacity building of domestic construction enterprises to be competitive. One of such strategy for capacity building is networking. Networking is described as a phenomenon that is “reshaping the global business architecture” (Parkhe et al., 2006, p. 560). Networking has been recognized as a fundamental component for small to medium sized enterprise (SME) survival and growth. Networking is known to be useful in assisting owner/managers to obtain both vital resource allocation and information sharing (Jack, 2010; Havnes & Senneseth, 2001; Gronum et al., 2012; Ge et al., 2009).

Such knowledge about networking underscores its importance which explains why it has been research extensively. Because of its proven ability, research on networking no longer focus on determining whether networking is important, but rather on which networking drivers that enable the utmost successful participation. Zhao & Aram, (1995) argues that networking ultimately consists of two dimensions: network *intensity*, i.e. the extent to which SMEs participate in networking activities and network *range*, i.e. the span of contacts within the network. These two dimensions have been shown to positively influence vital factors such as successful firm survival and firm growth (Ge et al., 2009; Watson, 2007; Zhao & Aram, 1995).

The benefits of networking are numerous. It allows firms to influence what resources and, thus, what strategic options that are available to them (Coviello & Munro, 1995). And since expanding an enterprise with only internal resources is extremely difficult (Lechner & Dowling, 2003; Ritter & Gemunden, 2004; Kirkels & Duysters, 2010) domestic construction companies which are mostly small to medium sized enterprises (SMEs) are increasingly encouraged to develop external networks (Street & Cameron, 2007; Ritter & Gemunden, 2004; Havnes & Senneseth, 2001; Kirkels & Duysters, 2010) to obtain the needed resources to be competitive.

It has been empirically proven that belonging to external networks will benefit SMEs long term, because networks enable firms to access resources that are important for their overall growth, performance and survival (Ge et al, 2009; Street & Cameron, 2007 Ritter & Gemunden, 2004; Havnes & Senneseth, 2001; Kirkels & Duysters, 2010; Hanna & Walsh, 2002). Networking, therefore, has the potential to enable such ‘domestic construction enterprises’ to obtain the necessary resources needed for competitive advantage. The foregoing benefits of networking factors that makes it the right cooperate strategy for the ‘domestic construction enterprises’ in Ghana. What is needed are enablers that will facilitate the networking of domestic construction enterprises to ensure successful outcomes.

5. DISCUSSIONS AND DIRECTIONS FOR FUTURE RESEARCH

The paper has highlighted the social and the economic benefit a nation derives from the construction industry, which further underscore the need for the development of the construction industry. It also identified the massive take-over of big and mega infrastructure projects by non-domestic construction companies in the country as a potential threat to the Ghana construction industry development agenda, and also highlights the overall effect that can have on the Ghanaian economy. The paper further identifies networking as the right cooperate strategy by which firms can build their

capacities in terms of acquisition of resources and essential experience in order to gain competitive advantage needed for competition with non domestic construction companies operating in Ghana. The study open new directions of construction management research which places emphasis on networking of domestic construction enterprises for infrastructure delivery as a means to complement the construction industry development agenda.

This paper has provided the stimulus for research in areas of construction management that focus on the impact of heavy involvement of non domestic construction companies in infrastructure delivery in Ghana, prospects of adopting networking as a strategy for capacity building of domestic construction companies and the involvement of professional associations as network third party enablers.

Further empirical investigations should be done to establish the intensity of the effect of non domestic construction companies on the economy of Ghana and the construction industry development agenda. The impact the activities of non domestic construction companies on the economy of Ghana and the construction industry development agenda deserves a thorough empirical investigation.

Because strong evidence of the importance of networking for SMEs already exists, the focus of network theory research should be on the network characteristics that pose as most positively influential for active networking of domestic construction enterprise in Ghana.

Again, the two dimensions that have been claimed to ultimately make up the network construct (Zhao & Aram, 1995; Ge et al., 2009), namely network intensity and network range, deserve investigation in the context of domestic construction enterprises.

Third party involvement has previously shown to increase levels of trust (Chrisman & MacMullan, 2004) and levels of activity and cooperation within SME networks (Reagans & McEvily, 2003). Third parties are known to influence the networking process positively by increasing knowledge transfer, firm willingness for cooperation (Reagans & McEvily, 2003) and instilling trust within the network (Chrisman & MacMullan, 2004; Burt & Knez 1995). Prospects of professional associations such as Ghana Institution of Surveyors (GhIS), Ghana Institution of Engineers (GhIE), Institution of Engineering and Technology of Ghana, (IET-Ghana), Ghana Institute of construction (GIOC), Chartered Institute of Builders, Ghana Institute of Architect (GIA) involvements as network third party enablers therefore deserves investigations.

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